

Executive Summary

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The California Department of Water Resources, in collaboration with the University of California, Davis Center for Integrated Watershed Science and Management, and The Nature Conservancy propose to develop a multi-objective restoration planning, design and monitoring program for the McCormack-Williamson Tract. This proposal is a request for support for the design and environmental documentation of this project (Task 5). Support for historic research and baseline studies necessary for informing restoration design and the development of a monitoring program (tasks 1-4, 6) are requested in an identical, companion proposal submitted by UC Davis (McCormack-Williamson Tract Restoration Planning, Design and Monitoring Program: I). The McCormack-Williamson Tract is a 1600 acre Delta island located in southwestern Sacramento County within the Sacramento-San Joaquin Ecological Management Zone. The Tract lies immediately downstream of the confluence of the Cosumnes and Mokelumne Rivers and is currently farmed. The Tract has been designated in the ERPP as a Stage 1 Targeted Action for restoration and flood management. CALFED funding has been received by The Nature Conservancy for acquisition of the tract. This proposal seeks funds for baseline studies necessary for project planning and design, and the development of long-term monitoring programs. The primary ecological/biological objective of this work is to restore self-sustaining freshwater tidal marsh and riparian habitat within the McCormack-Williamson tract. Restoration of these priority habitats is intended to: 1) support aquatic and riparian species of concern, 2) promote Delta foodwebs by reintroducing more natural, unimpaired flow conditions, 3) provide support for adaptive management of seasonally and perennially flooded habitats in order to promote native invertebrates and fish and to limit the impact of invasive species, such as the Chinese Mitten Crab. Ancillary benefits of this project include: 1) enhance flood management in the project area, 2) new methodologies for assessing historic and current hydrologic conditions and sedimentologic flux rates in the Delta, 3) new expert systems for biological monitoring in the Bay-Delta region. All aspects of this project support CALFED objectives within the Bay-Delta.

The hallmark of this project is its parallel programs that link the activities of UC Davis researchers with DWR and TNC scientists and planners in order to inform design of the restoration project, maximize its ecologic/biologic objectives, and develop new methodologies that meet CALFED's ERP objectives. In order to expedite implementation, these programs will be conducted at the same time over a two-three year period. Six tasks have been identified with a significant range of deliverables.

Task 1: Restoration Planning: analysis of historic hydrogeomorphic conditions. This task recognizes that historic conditions are the best guide for restoration design and the foremost determinant of the likelihood of restoration success. An intensive coring program within the Tract and in nearby reference wetlands will be conducted over a two year period. Cost: \$84,397

Task 2: Modern hydrologic and sedimentologic regime. New methods and instrument packages will be employed to calculate suspended load and bedload flux rates from the Cosumnes and Mokelumne Rivers over a two year period. This information will be combined with historic analyses to aid in modeling and designing sustainable freshwater tidal marsh systems. Cost \$182,364.

Task 3: Baseline studies of aquatic resources. This work will focus on documenting pre-project conditions of aquatic foodwebs and species of concern in the vicinity of the Tract. The emphasis of this task will be upon evaluating the use of flooded areas by native and non-native

invertebrates and fishes over a period of two years. The goal will be to guide design of the project to maximize support for native species and limit, where possible, invasive species. These baseline studies will support a long-term biological monitoring program. Cost \$154,231.

Task 4: Baseline studies of riparian resources. The UC Davis Information Center for the Environment (ICE) will establish a vegetation inventory and classification system of riparian habitat resources in the M-W Tract and adjacent riparian areas. Additionally, the Point Reyes Bird Observatory will conduct extensive bird surveys in the area. This two year program will guide restoration design to optimize riparian resources and will serve as baseline data for long-term monitoring. Cost \$77,639.

Task 5: Design of engineering alternatives. The hydrogeomorphic and biological analyses conducted in Tasks 1-4 will be utilized in guiding the design of the M-W tract restoration program. DWR will work collaboratively with CIWSM scientists and The Nature Conservancy in the design of a set of engineering alternatives for the restoration program. All efforts will be coordinated with on-going flood management studies in the area being conducted by the US Army Corps of Engineers. This program will be completed for public review and comment during the third year of the project. Cost \$355,000

Task 6: Data management and monitoring systems. During the first two years of this project ICE will develop software to manage and analyze biologic data developed for this project. This data analysis system will be used to support long-term monitoring of the project, as well as other CALFED projects in the region. Additionally, a website will be developed to disseminate data and analyses directly to stakeholders and decisionmakers in the region. Cost \$57,569.

The parallel submission of two proposals (I and II) is to separate administrative responsibilities for tasks. The total support requested from CALFED for design and environmental documentation by DWR is \$355,000. It is requested that Tasks 1-4, 6 be funded separately in a contract with UC Davis. The total support requested from CALFED for the UC Davis portion of this project (Tasks 1-4, 6) is \$556,200, including overhead. It is anticipated that the UC Davis portion of this project will be funded through the Interagency Agreement between UC Davis and CALFED. Matching funds for this project totaling \$250,000 are provided by the UC Davis Center for Integrated Watershed Science and Management through a Packard Foundation Conservation Program grant. The UC Davis John Muir Institute for the Environment will provide \$50,000 support for a Science Coordinator for the project. In-kind services include space, computer system support, and faculty salaries. DWR will provide \$50,000 of in-kind services in the form of project management. No adverse third party impacts have been identified.

The goal of this project is to utilize pre-project baseline studies to develop and implement a long-term monitoring program. Replicate, georeferenced sampling programs will be established for geomorphic and biologic monitoring and submitted for CALFED and peer review prior to the end of the project. All UC Davis researchers are faculty members with well-established research records in their respective fields. DWR has extensive experience in design and implementation of restoration projects.

All activities associated with this proposal will be coordinated with on-going 905b studies being conducted by the US Army Corps of Engineers. Funds requested here are for studies that directly support CALFED ERPP goals and are not part of the 905b project. With support from acquisition funding from CALFED, TNC will provide stakeholder outreach and coordination for this project. The UC Davis CIWSM will provide technical expertise to TNC for this outreach program under the current UC Davis/TNC MOU.